The Sampler

PROTECTING NEW HAMPSHIRE'S LAKES THROUGH THE DEDICATION OF VOLUNTEERS

PUBLISHED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
VOLUNTEER LAKE ASSESSMENT PROGRAM, SPRING 2008

Ah, Spring. Oh, Exotic Plants!
Updates from the Exotic Species Program

by Amy P. Smagula, DES Limnologist and Exotic Species Coordinator

Yes, spring is finally here, but unfortunately the first thing to turn green and "spring" to life are the exotic aquatic plants in waterbodies that have the misfortune of being infested.

At the close of the growing season last fall, we added four new names to our list of waterbodies that are impaired by exotic aquatic plant growth. Lake Pemigewasset in New Hampton was added to the list, with variable milfoil staking claim to approximately 40 acres of the lake. Powwow Pond, with a small 5-acre infestation of variable milfoil was also added to the list, as was Glen Lake in Goffstown, with a 3.5 acre infestation of variable milfoil. Halfmoon Pond in Barnstead was added to the list due to a small and isolated variable milfoil infestation. Luckily, this pond may not be on the list for long, since the scattered milfoil stems are being regularly hand-pulled by Department of Environmental Services divers, and that infestation is pretty well under control. This brings our tally up to a total of 72 infested waterbodies to start off the season of 2008 (61 lakes and ponds and 11 river systems).

With every new infestation, the importance of prevention and early detection efforts becomes increasingly more important, and luckily, New Hampshire has two complimentary programs to help protect your lakes from exotic plants. If your lake association is not already actively involved in the Lake Host Program or does not have an active Weed Watcher Program, now is the time to act.

The Lake Host Program, which is funded in part by DES and coordinated by the New Hampshire Lakes Association, serves to help prevent new infestations by educating transient boaters at the boat launch about problems associated with exotic plants, and courtesy boat inspections are conducted to

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VLAP Receives EPA Merit Award!

The VLAP Program was awarded EPA's prestigious Environmental Protection Agency Environmental Merit Award for 2008. The Environmental Merit Award honors individuals, businesses, scientists and others who have made outstanding contributions on behalf or our region's health and environment. The award ceremony was held on April 22, 2008 at Faneuil Hall, Boston.

The VLAP coordinators would like to take this moment to recognize all of the volunteer monitors, without whom VLAP would not have received this award. It is your diligence and dedication to water quality monitoring that enables VLAP to succeed. As VLAP celebrates its 23rd year, we are grateful to have such a longstanding and successful program. Thank you!

Connor's Corner

by Jody Connor
DES Limnology Center Director

Welcome volunteer monitors to 23 year of VLAP. As always, we have new program and water quality challenges to face each year. Our goal is to work together as a group to find solutions to these challenges.

VLAP established a record number of participating lakes in 2007, and we hope to see this continue! This past year 11 new lakes joined the program increasing the number of VLAP participants to 175 lakes. VLAP's sister program, Weed Watchers, also continues to grow and has demonstrated its' importance in protecting our lakes from exotic aquatic plant infestations through early detection and quick response protocols. As VLAP and Weed Watchers continue to grow, program coordinators are always looking for new ways to make life a little easier on our dedicated volunteers. If you have ideas that will benefit VLAP, please feel free to share them with us.

DES continues to encourage volunteers to monitor the lake and tributaries for conductivity and chloride. Our VLAP trends continue to reflect a great increase in both conductivity and chloride at all our lakes throughout the state. The source of this increased chloride concentration is likely road salts and septic systems from surface runoff and groundwater seepage. If the rate of salt loading to our lakes continues, these higher concentrations will likely affect physical and biological processes within the lake. The winter of 2008 will certainly have an environmental impact upon all our waterbodies. With record snowfalls and record amounts of salts placed onto our roadways, conductivity, chlorides and yes phosphorus are likely to increase within our tributaries and waterbodies.

We all need to work together to protect lake quality through watershed protection efforts. DES relies on VLAP monitors to keep abreast of the latest monitoring and watershed management programs that may help protect the waterbodies you live on. Please read the recommendations that biologists include on each VLAP report and try to incorporate these recommendations for the upcoming year. The recommendations are the result of water quality issues and trends that were through your diligent monitoring efforts.

The only way to circumvent these issues is to make sure that your lake association and monitors continue to educate key municipal leaders. Make sure that local government committees and boards receive a VLAP report copy to keep them in the loop to trends occurring in local waterbodies. Make it your responsibility to keep them well informed and active in solving issues in which municipal activities influence water quality. Town and state roadways have an extreme impact in the amount of water and pollutants that enter the lake. There are new watershed and road runoff treatment technologies available to remove pollutants before they enter the lake. Lake protection and watershed management can only be achieved if we all work together.

Lake Management and TMDLs

EPA has taken notice of all the great work we have accomplished in our 22 years of monitoring New Hampshire lakes. As a result, New Hampshire and the federal government know more about our lakes and we are now concentrating on management plans for many of our lakes to help minimize the impacts from pollutants. These management plans are often the result of Total Maximum Daily Loads.

Total Maximum Daily Loads (TMDLs) are required under the federal Clean Water Act (CWA). The CWA requires states to identify waters not meeting current state water quality standards (impaired waterbodies) and to develop TMDLs for these waters. A TMDL sets the maximum amount of a pollutant that a waterbody can receive

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and still support designated uses. Thirty lakes will go through the TMDL process over the next year. Most of these TMDL lakes are impaired as a result of phosphorus, chlorophyll, cyanobacteria and dissolved oxygen. Once completed, these models will give us a baseline pollutant load that can be assimilated by specific lakes. Based upon these loads, Best Management Practices (BMPs) and remediation activities will be recommended to limit the pollutant load. An implementation strategy will guide towns and lake residents on how to incorporate recommended BMPs to reduce pollutant loads to the waterbody.

National Lake Assessment

This past summer, DES biologists conducted assessments at sixteen waterbodies as part of the National Lake Assessment (NLA) Program. The NLA Program will provide regional and national estimates of lake conditions. The survey is designed using a probability-based network that will provide statistically valid estimates of the conditions of all lakes with known confidence. Sample lakes are selected at random to represent the condition of all lakes in regions that share similar ecological characteristics.

After several weeks of special EPA training, assessment lakes were sampled by DES biologists for a series of chemical parameters, bacteria, phytoplankton, zooplankton, cyanobacteria toxins, sediment chemistry and biological integrity. The NLA program managers will assimilate the data in 2008 and provide a report to Congress in 2009 on the health of our nation's lakes and ponds. Some of the NLA data collected in 2007 was included in the VLAP reports of lakes that participated in the sampling effort last summer. We will discuss the results of the final NLA report with you once we receive and analyze the report findings.

What to Expect for Lake Quality Trends for the 2008 Season

As we have discussed in past years, lake quality trends are closely linked to seasonal weather patterns. Take for example the 2007 season. An above average late spring snowfall combined with above average wetfall in May and early June impacted some of our state's lakes and ponds. Typically, the waterbodies with the larger watersheds may have received the most impact from the spring rains. Heavy rains moved higher volumes of particulate matter and bacteria from the watershed to the lake. Suspended solids, phosphorus and bacteria influenced all New Hampshire lakes during the early summer months. If you pick up your handy VLAP reports, you may likely observe that June chlorophyll may be at its maximum summer level while clarity may be at its lowest level. DES posted a record number of cyanobacteria advisories (11 advisories) during the 2007 season. The increased advisories were likely the result of increased phosphorus loading from the watershed to the lake and above average temperatures in August and September.

Global warming is certainly the most discussed issue with environmentalists throughout the world. Many limnologists are looking into the impacts of global warming to the world's waterbodies. Increased patterns of violent weather that includes high intensity wetfall events and warmer temperatures are all attributed to Global warming. Continued high intensity wetfall combined with warmer water will likely result in increased cyanobacteria cell production and increased seasonal duration of surface scums.

New Hampshire lakes are clearer than most states as a result of their ability to recover once the ice forms and snow covers the surface. With little sunlight penetration, chlorophyll production is limited. Most of the cyanobacteria, phytoplankton and aquatic macrophytes are forced to limit cell production. Some cyanobacteria can produce akinetes that settle to the bottom and begin cell production once conditions are favorable for growth.

Sara Sumner and Jody Connor display VLAP's Environmental Merit Award.

Although still a little too early to predict wetfall for the spring, the state has a large snow pack from record amounts of snowfall. The snow pack has melted slowly so far but increased temperatures and wetfall events could lead to increased runoff. If New Hampshire continues the current wetfall patters as has been the case during the winter, expect increased runoff, turbidity and phosphorus to our lakes. Expect ice-out on our larger lakes to occur in mid to late April. The combination of sunlight and increased phosphorus will result in a significant spring diatom increase during May and June, high productivity and lower transparency.

Connor's Corner

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Controlling Dust Can Protect Your Lake!

by Rebecca Lelesi, former VLAP intern

Unpaved roads are common in rural areas of New Hampshire. Although dirt roads are quaint and charming, the tremendous amount of dust produced is an environmental pollution source. The fine dust particulates can contribute to phosphorus loading, by means of atmospheric deposition to lakes and ponds.

Dirt roads are, in fact, the leading producer of particulate air pollution in the US according to the Environmental Protection Agency. Unpaved roads produce almost five times the amount of particulate matter as the next two leading causes, construction and wind erosion, combined. The amount of dust is staggering. "One car making one pass on one mile of dirt or gravel road one time each day for one year creates one ton of dust." Clearly this is no small problem. Fortunately there are methods to control dust.

Research has shown that a successful treatment plan can significantly reduce dust production by as much as 30 percent to 80 percent, and reduce the amount of necessary road maintenance. Among the benefits of reduced pollution and road deterioration are reduced health problems associated with particulate pollution, increased plant productivity on roadsides because the dust is no longer blocking sunlight, and less vehicle maintenance. Dust control measures are a necessary part of routine dirt road maintenance in order to reduce road deterioration, to prevent environmental pollution, and improve living conditions.

There are several proven techniques for road dust reduction. Some standard techniques in use are calcium and magnesium chlorides and asphalt emulsions. While these techniques are effective for dust suppression, they can have serious environmental impacts. For example, chlorides can kill roadside vegetation and if introduced to a stream or lake can be detrimental to aquatic life. Because of the unfavorable qualities of these methods it is important to weigh all risks and benefits carefully before use.

Fortunately there are environmentally friendly methods for dust suppression. One product is a resin emulsion called Road Oyl,* which uses natural tree resins. When appropriately applied, Road Oyl has been shown to be very effective at controlling dust and has little to no environmental impacts associated with it. Road Oyl has even been used in national parks and by the U.S. Forest Service because of its low environmental risk. Another environmentally friendly product in use is soybean oil soapstock. Soybean oil soapstock is a natural by-product of the soybean refining process. When applied to roads in appropriate concentration, it has been proven effective in reducing dust without causing water quality problems.

While dust control methods are not a perfect technique, they can have a significant impact in reducing particulate pollution and can provide benefits such as, reduced water and air pollution, better living conditions, and reduced road maintenance. Perhaps with dust control methods dirt roads can be quaint and charming once again.

Sources:

Environmentally Sensitive Maintenance for Dirt and Gravel Roads

March 2006, Alan L. Gesford, P.E., John A. Anderson Ph.D.

Questions and Answers: Road Dust Control with Soapstock. www.usroads.com/journals/rmej/9806/rm980604.htm

Road Oyl Resin Modified Emulsion. www.midwestind.com/roadoyl.htm

*The products mentioned in this article have not undergone DES product review and are not currently endorsed by DES.

Sharing a Vision. Sharing a Lake.

By Kate Tarlow Morgan

As a "devotee" of the Volunteer Lake Assessment Program and the VLAP coordinator for Warren Lake in Alstead, I took a busman's holiday summer of '06 and paid a visit to the shores of Big Turtle Lake in Northern Minnesota. Big Turtle Lake is a 1,436 acre body of water located in central Beltrami County. It is a recreational development lake, which is typically deep with an irregular shoreline. Water clarity averages 8.5 feet; maximum depth of 63 feet.

Citizen volunteers from the Turtle River Watershed Association (TRWA) have participated in a lake monitoring program since 1998. Jan Enquist, one of the founders of the Association, was my host. Indefatigable when it comes to environmental concerns, Jan, over 80 now, was roommates with my mother at Carleton College in Northfield, Minnesota. She was aware of my work as VLAP monitor in New Hampshire, and invited me to attend their annual lake meeting. The meeting was an interesting one as I had the opportunity to witness a "visioning" session.

TRWA was invited to participate in the Northwest Minnesota Foundation's Healthy Lakes and Rivers Partnership program along with seven other lake associations in Beltrami County. Representatives from each group attended two days of training on strategic planning, communication, and non-profit group leadership.

Following the training session, each Lake Association held an inclusive community planning/visioning session designed to identify key community concerns, assets, opportunities, and priorities. TRWA held this visioning session during my stay and was led by Beltrami Soil and Conservation District Coordinator, Chris Parthun.

This was an inspiring session, held in the format of a round robin, where members had the opportunity to be able to offer unlimited ideas. Several very clear but comprehensive questions were posed:

1) What do you like about the lake? Why do you live here? What is special and unique about this lake?

2) What conditions would you improve? What challenges do you see for this lake?

Details of this public meeting were documented on large pad format as lists for members to see. Later, colored sticky dots were passed out and members were asked to place a colored dot on three of the most important issues, and a colored dot on three of the least important issues.

The purpose of this visioning work was to give voice to all members, to prioritize goals, and guide citizen action. Eventually, a lake management plan would be put in place to address issues of fisheries management, aquatic vegetation, wildlife, invasive species, land use practices, water surface use, water access, and water quality assessment. In the case of Minnesota, with its 10,000 lakes, there is an effective amount of support both in terms of experts and financing for working on a management plan and implementing action.

I returned home to New Hampshire inspired to introduce a visioning session in our own Lake association. Granted, Warren Lake is only three miles in circumference and at its deepest, 14 feet, but the issues, the needs, and the conflicts were the same.

In July of 2007, the members of Lake Warren Association participated, energetically, in *an inclusive community visioning session* using the two Minnesota-based questions concerning 1) assets and 2) concerns. Audience participation was overwhelming, and my sharpie pen ran out of ink. I was most impressed by the way in which people who, in the past, did not generally agree were able to hear one another's opinions, hopes, and dreams for a body of water – utilized by all.

Another plus to the open-panel visioning session was identifying themes that can be pinpointed for further research and education. For example, the common request for a lake to maintain high water levels at all times can later be addressed by educating members that a lake whose water level never fluctuates is an unhealthy lake. Fluctuating water levels are good and assist in seasonal vegetation growth, supporting snail and fish populations through their life cycles.

The next step for our small membership is to tally our findings from the public list of issues (marked by more blue dots) and a tally from a personal "issues" questionnaire. These findings are the beginning seeds, along with ten years of consistent water quality assessment, to arriving at realistic goals in forming a Lake Warren management plan.

I want to thank Minnesotans: Jan Equist, Chris Parthun and Dann Siems for their generosity in educating this NH VLAP-er; and thanks to state limnologists – Jody Connor, Sara Sumner and Andrea LaMoreaux – for their vigilance in keeping these programs alive.

2007 Volunteer Limnologist & Secchi Disk Award Recipient

Since 2004, DES has recognized at least one volunteer for his or her dedication and commitment for volunteer lake monitoring. This award has been appropriately named the Volunteer Limnologist Award because each time a volunteer monitor collects a water sample from a lake or pond or conducts a Weed Watcher survey, the volunteer is performing the role of a true limnologist. In addition, the Secchi Disk Award is given to the overall Volunteer Limnologist award winner of the year.

Ted Covert of Contoocook Lake, Jaffery, winner of the 2007 Volunteer Limnologist Award.

At the 2007 Annual Volunteer Lake Assessment program workshop, Ted Covert of Contoocook Lake, Jaffrey, received the Volunteer Limnologist Award and the Secchi Disk Award. Ted has monitored Contoocook Lake at least three times each summer through VLAP since 1994. He has been extremely active in educating members of his lake association, the watershed, and the community about responsible lake stewardship. In particular, Ted has been a dedicated Weed Watcher involved in exotic plant control management projects, the Lake Host Program, and advanced tributary sampling. Thank you, Ted, for your continuing dedication to protecting and improving the quality of New Hampshire's lakes and ponds!

2008 Nominees

The following individuals have been selected to receive the Volunteer Limnologist Award and have been nominated for the Secchi Disk Award:

Karen Bunch, Dublin Lake, Dublin
Karin Nelson, Lees Pond, Moultonborough
Pat and Dave Johnson, Forest Lake, Winchester
Bill Jackson, Thorndike Pond, Jaffrey
Dave Barney, Goose Pond, Canaan

Attend the VLAP Workshop to see who will receive the 2008 Secchi Disk Award!

Future Nominees

If you would like to nominate someone for these prestigious awards, please send or email a letter explaining who you have nominated and why, to the VLAP Coordinator before April 2009.

Attend the Annual VLAP Workshop!

May 17 in Concord or May 31 in Jefferson

The 2008 VLAP Annual Workshops will be held on Saturday, May 17, at the Department of Environmental Services in Concord, from 8:30 a.m. to 12:30 p.m.; and on Saturday, May 31, 2008 at the Jefferson Town Hall in Jefferson from 8:30 a.m. to 12 noon.

There is no fee for the workshop and complimentary snacks and beverages will be provided.

All workshop participants will learn about the latest lake management activities, VLAP program updates, and the new Comprehensive Shoreland Protection Act. Also, the recipient of the 2008 Secchi Disk Award will be revealed.

In addition, attendees can choose to attend two of the three following sessions: aquatic plant identification workshop, lake ecology and sampling refresher, or volunteer opportunities for the Loon Preservation Society.

If you would like to attend, please contact Sara Sumner, VLAP coordinator, at (603) 271-2658 or sara.sumner@des.nh.gov.

Identifying exotic weeds.

Tracking Down Non-Point Source Pollution: Updates and Outcomes

Silver Lake, Nelson/Harrisville

In 2004, the Silver Lake Land Trust and its partners, the Silver Lake Association of Chesham and Nelson (SLA) and the towns of Harrisville and Nelson, received a DES Local Watershed Initiative Grant to investigate best management practices for stormwater and septic systems in the Silver Lake watershed. During 2005, Silver Lake Association members documented stormwater problem areas primarily attributed to the erosion of dirt roads. Representatives of the SLA, DES, Geosyntec, Inc., and the Harrisville Road Agent met to discuss and prioritize potential road improvements to reduce or eliminate road erosion.

Conceptual designs for 15 sites, including the boat launch, Breed Road, Cricket Hill Road, and East Side Road were presented to SLA for final design consideration. A combination of best management practices including stormwater diversion, velocity reduction, infiltration, shoreline stabilization, and road stabilization were considered.

In 2006, SLA, GeoSytec, Inc. and the town of Harrisville finalized site selection for stormwater improvements. Three sites located along East Side Road were selected for construction and final as-built designs. Improvements include ditchline stabilization with geotextile and stone, culvert replacements, sediment retention areas and stand-pipe and headwall construction. These stormwater improvements were completed in 2007, and DES hopes to measure a decreased phosphorus load to Silver Lake in the following years.

Webster Lake and Sucker Brook Watershed, Franklin

Sucker Brook, a major tributary to Webster Lake, was initially investigated by DES in 2003 as a result of persistent elevated *E. coli* concentrations. Following the initial subwatershed site investigation by DES, a scope of work was developed for the Sucker Brook watershed. The Sucker Brook sampling team, composed of volunteers from the towns of Andover and Franklin, collected seven rounds of samples at 12 stations along Sucker Brook and its tributaries. As a result of these efforts, two areas were identified as having elevated *E.coli* levels. Both areas were tributary streams discharging to Sucker Brook.

Ongoing construction showing channel diversion/stabilization on Silver Lake.

More than 40 cows had unrestricted drinking water access to a perennial stream that directly discharges to Sucker Brook. After confirming that a nearby farm was partly responsible for elevated *E.coli* levels in Sucker Brook, DES contacted the Natural Resources Conservation Service (NRCS). Under the Environmental Quality Incentives Program, NRCS works with local farmers, offering assistance for planning, designing, and installing conservation practices to protect water and properly care for domestic animals.

During the summer of 2005, NRCS worked closely with the farm owner to secure funding to install a dug well, water line and water storage facility on the property. During the spring of 2006, the farm installed 1,700 feet of three-strand barbed wire fencing to prevent stream access. These farm improvements will have long-term positive impacts on surface water quality of the stream and the lake, reducing bacteria, and nutrients including phosphorus.

In 2007, the DES Watershed Management Bureau added Sucker Brook to the Volunteer River Assessment Program. VRAP volunteers collected water quality samples at five sample sites established during previous testing of Sucker Brook in 2005 and 2006. These five sites will be routinely monitored for pH, conductivity, dissolved oxygen, total phosphorus and total suspended solids two to three times during the summer months.

In addition, a stream gauge was established on Sucker Brook that will provide information for DES to generate pollutant load estimates for Sucker Brook and Webster Lake.

Limnologists in Training

by Alicia Carlson, DES Source Water Protection Education Coordinator

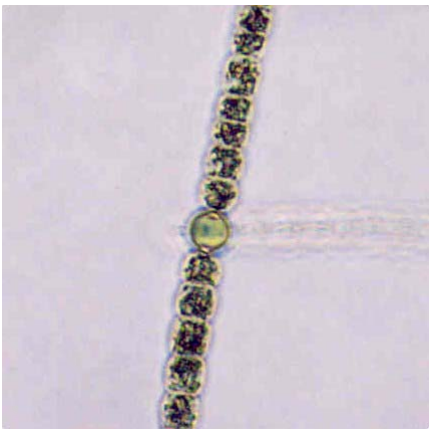
On a hot summer day, nothing is more pleasant than diving into a clear, cool lake for refreshment. Unfortunately, not all lakes and ponds are clear and cool! Lakes come in many different forms – some are deep and have rocky bottoms with little plant growth, while others are shallow, mucky, and full of weeds. Of course, there are many in-between lakes also. Most of the time, lakes are refreshing no matter what they look like.

Sometimes, though, there may be tiny organisms lurking in the water that can be harmful to swimmers, canoeists, kayakers, water skiers and tubers. Let's get to know these little buggers.

One organism of concern is called cyanobacteria. These are typically too small to see without a microscope – they are single-celled organisms – but when they grow abundantly, cyanobacteria can be visible to humans. Like plants, there are many different types of cyanobacteria – they don't all look the same! Some are called "colonial," some are "filamentous," while others are only found as single cells. Also like plants, cyanobacteria can produce their own food and, in the process, they release oxygen to the atmosphere.

Cyanobacteria can be harmful when the air temperature heats up and warms the lake waters late in the summer. They especially enjoy excess nutrients that wash in from the watershed – they use nutrients as food. Cyanobacteria thrive in these conditions and may become what biologists call a "bloom" – this is when they are visible to humans. Some cyanobacteria contain toxins that can cause illness in humans. If a bloom of harmful cyanobacteria is occurring, simply getting into the water or swallowing the water can make you sick.

So, beware of water that looks like pea soup or neon green paint



slicks! This water may contain cyanobacteria. If you find something suspicious, call your local lake association, water district or state biologist to let them know what you have seen. They can inspect it and let you know if what you see is, in fact, a cyanobacteria bloom. Keep your eyes on your lakes!

Test Your Knowledge!

Now that you've read all about cyanobacteria, try the word scrambles below. Here's a hint – all of these words can be found in the text. Good luck! Answers on page 12.

osntamuleif	__ __ __ __ __ __ __ __ __ __ __
noiclaol	__ __ __ __ __ __ __ __
mfaurhl	__ __ __ __ __ __ __
omlob	__ __ __ __ __
gxneoy	__ __ __ __ __ __
setrniunt	__ __ __ __ __ __ __ __ __
sertwhade	__ __ __ __ __ __ __ __ __

VLAP Opens Satellite Lab at Plymouth State

VLAP and Plymouth State University's Center for the Environment (CFE) teamed up in 2006 to open a satellite laboratory located in Plymouth. The laboratory was to serve VLAP lakes/ponds in the northern portion of the state to defray travel costs and sample transport time. That satellite laboratory opened its doors to VLAP volunteers and lakes in 2007. We are very pleased to announce an extremely successful first season!

Approximately 10 lakes utilized the laboratory in 2007. Approximately 431 results were generated for chlorophyll-a, alkalinity, pH, conductivity, turbidity, total phosphorus and *E. coli*. Approximately 63 laboratory duplicates samples were analyzed for quality assurance and quality control purposes. All duplicate samples met the required QA/QC criteria. This is an impressive feat for a new laboratory and would not have been possible without the expertise of the CFE staff and laboratory managers. CFE's satellite laboratory operates state of the art equipment to generate quality data for the VLAP Program.

We encourage VLAP lakes in the northern portion of the state take advantage of these services. After a successful and problem free first year, we anticipate a strong working relationship with the CFE laboratory in the future. In fact, the DES Volunteer River Assessment Program anticipates using its services in the coming years.

The laboratory has sampling equipment and bottles to loan out for sampling purposes and operates on a daily basis; but make sure to call ahead prior to picking up or dropping of samples! Please feel free to contact lab managers Janet Towse and Adam Baumann at (603) 535-3269 to schedule your 2008 sampling dates. And lastly, thank you Janet and Adam for making the new satellite laboratory a success!

Austin Cate Wetland in Strafford.

VLAP Receives NOAA Grant

VLAP is the recipient of a $94,000 federal grant that was championed by Sen. Judd Gregg. The grant is from the National Oceanic and Atmospheric Administration. The funding is targeted towards volunteer programs in the northern section of the state and the new VLAP satellite laboratory located at Plymouth State University. This funding will assist VLAP in education, outreach and recruitment of lakes in the North Country, and help the PSU laboratory to handle additional samples as more of our northern waterbodies join VLAP. We will also be able to help these lake associations purchase needed sampling equipment and provide some additional monitoring to locate pollution sources. DES hopes that those participating northern lakes have benefited from the PSU laboratory and have saved time and travel costs by picking up sampling equipment and returning samples for analyses. We encourage you to continue utilizing the PSU laboratory services during 2008!

A corn snake in the bushes at Chestnut Pond. Photo by VLAP volunteer Martha Chase.

A Healthy Garden and Lawn Makes for a Healthy Watershed

No matter where you live, you are in a watershed. Within that watershed, rain and snow falling on homes, lawns, and driveways eventually finds its way to the lowest point - in a river, lake, pond, stream, or ocean. Often, without realizing it, homeowners add pollutants, including lawn chemicals, fertilizers, silt, and sand, to surface waters. However, with a few minor changes to your garden and lawn care routine, you can begin playing an active role in improving water quality in your watershed, while saving yourself both time and money.

Often, without realizing it, homeowners add pollutants, including lawn chemicals, fertilizers, silt and sand, to surface waters.

You can start by taking a close look at landscaping and gardening practices around your house that might be contributing to polluted runoff. Once you start looking at your yard as a solution to pollution rather than a cause, it is easy to make a few changes and still have a beautiful yard and garden.

Do you need all that lawn? Reducing the size of your lawn will not only save you time and money from mowing, watering, and fertilizing, but it will also save your watershed from pollutants in fertilizers, pesticides, and other backyard runoffs. Plant groundcovers, trees, flowers, and shrubs to help water infiltrate into the ground and prevent soil erosion instead of running off a compacted lawn. Creating attractive wildlife habitat can be an added benefit.

How healthy is your soil? Test your soil to know what it actually needs before you apply fertilizer or lime. If you must fertilize, select a slow release fertilizer or organic fertilizer to avoid excess nutrients running into the water. Extra nutrients in waterbodies increase aquatic plant growth, and their eventual decay depletes oxygen needed by fish and other aquatic creatures. Maintain a fertilizer-free buffer around wetlands and surface water. Do not to apply fertilizer within 25 feet of these sensitive areas.

What types of grasses are growing in your lawn? Where you need to have a lawn, a mixture of grasses (e.g., fine and tall fescue, perennial ryegrass, and Kentucky bluegrass), clover, and legumes is the ideal combination. The mix of the different species requires less nitrogen fertilizer, less water, is more resistant to diseases and pests, and provides a more hospitable environment for beneficial insects.

What types of plantings do you have? Consider planting natural, native plant species instead of non-native plants (plants that were introduced for agricultural purposes or by accident). Native plants generally require much less water, pesticides, fertilizers, or trimming.

Do you know your bugs? Identify your particular pest problem and choose the best method or combination of ways to deal with it. Use beneficial nematodes (microscopic predators for specific insects) or milky spore (insect specific diseases) and plant insect-repelling borders of marigolds, chives, onions, garlic or basil. Also, it is a good idea to rotate crops to keep insects from settling in.

Do you use compost? Professional landscapers and gardeners suggest adding organic material to your soil by mulching your plantings and top dressing your lawns with compost. Compost will reduce the need for fertilizers and water by supplying nutrients and helping the soil retain moisture.

Remember, whether we live in a city neighborhood or on a hillside far from a river or lake, each of us can help keep our watershed clean and healthy.

For more information on how your backyard can help water quality, contact Barbara McMillan, Outreach Coordinator, N.H. Department of Environmental Services, (603) 271-7889. For information about your garden or lawn, soil testing, native plants, composting, and more, contact UNH Cooperative Extension Family Home & Garden Education Center Info-Line (877) 398-4769 or visit their website at http://ceinfo.unh.edu/FHGEC/FHGEC.htm.

GreenWorks, July 2007

Remember, whether we live in a city neighborhood or on a hillside far from a river or lake, each of us can help keep our watershed clean and healthy.

Exotics Update

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remove tag-along plants and other materials from boats, trailers, and other aquatic recreational gear. Please contact Andrea LaMoreaux with the NH Lakes Association at (603) 226-0299 for more information about starting a Lake Host Program on your waterbody.

The Weed Watcher Program is coordinated by DES, and interested groups, such as lake associations or small groups of shore-front property owners, are instructed in how to monitor their waterbodies for early detection of new growths of exotic plants. This can apply particularly to water-bodies that are currently uninfested, but also to those waterbodies that already have an exotic aquatic plant. Early detection is the key to protecting your lake. To start a Weed Watcher Program on your lake or pond call (603) 271-2248 or e-mail Amy.Smagula@des.nh.gov. Refresher sessions can be scheduled if your group has not had training in a couple of years, or if you have recently expanded your group of Weed Watchers.

If your waterbody is already in a battle with an exotic plant, and if you plan to seek matching funds from the DES Exotic Species Program for control activities in 2009 or in future years, please note that we have slightly modified our protocols for granting matching funds, and have also implemented a strict set of deadlines for information to be submitted to DES as part of this grant process. As the number of infestations increases, so too does the competition for the matching funds. In an effort to be both fair and practical in granting these funds, DES will now follow a regular grant cycle. If you plan to request matching funds for an exotic plant control project, please visit the DES website to view the deadlines for requests and other materials at www.des.nh.gov/wmb/exoticspecies/documents/Exotic_-Plant_Control_Grant_Application_-Materials.pdf.

To help you learn more about exotic aquatic plants in general, the Exotic Species website is updated regularly at www.des.nh.gov/wmb/exoticspecies. New links have been added that include several final reports of a number of variable milfoil research projects that were conducted with federal dollars. You can find this information under the research links on the exotic species page.

Finally, the Exotic Species Program coordinator is available to come for a visit during your lake association meeting to give a brief presentation about the problem of exotic plants if your lake group is not already aware of such problems and nearby threats to your waterbody.

Let's all work together to make this a summer of no new infestations!

Connor's Corner

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The increased snow melt will likely lead to higher water levels this spring decreasing exposure to the near-shore littoral zone. Aquatic plant growth will likely begin a little later this season as decreased sunlight penetration and increased turbidity will discourage plant growth, especially exotic plants like milfoil. The increased littoral zone area will likely result in decreased spawning zone competition among the early spawning fish species. As sunlight warms the waters, spawning fish populations may experience a less stressful spawning season resulting in a decreased rate of fish mortality.

Dominant populations of green and golden brown algae may occur in many lakes by July. If we have a sunny spring, the appearance of filamentous green algae may become prevalent in early July. Increased amounts of phosphorus loading this spring will likely result in more lakes with cyanobacteria and an increased duration of scums. I anticipate an earlier appearance of cyanobacteria this season especially in those lakes that have chronic problems. Look for the appearance of cyanobacteria in early July this year.

I strongly recommend that lake associations monitor the tributaries and lake for conductivity, turbidity and chlorides this spring and summer. The winter snow and ice has forced road crews to apply increased quantities of salt and sand to the roadways. This will certainly be reflected tin tributary and lake chloride and conductivity concentration.

As always, you are welcome to contact us if you have questions and concerns with lake quality or watershed activities that may potentially impact lake quality. VLAP plays an integral role in DES's mission to protect and report on the quality of New Hampshire lakes. Volunteers like you are the ones who carry this mission out. I appreciate all your long work hours and your extreme dedication to keeping our lakes clean.

New Hampshire Department of Environmental Services
Water Division, Watershed Bureau, Biology Section
PO Box 95
Concord, NH 03302-0095

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Upcoming Events

May 17, 2008: DES Volunteer Lake Assessment Program Annual Workshop. DES, Concord, N.H. For more information, refer to announcement in this newsletter or visit www.des.nh.gov/wmb/vlap/events.htm.

May 31, 2008: DES Volunteer Lake Assessment Program Annual Workshop. Jefferson Town Hall, Jefferson, N.H. For more information, refer to announcement in this newsletter or visit www.des.nh.gov/wmb/vlap/events.htm.

June 13 - 14, 2008: 2008 New England Lakes Conference. Lake Morey Resort, Fairlee, Vt. For more information, visit www.vtwaterquality.org/lakes.htm.

June 25 - 26, 2008: Lakefest 2008. The Inn at Church Landing, Meredith, N.H. For more information visit www.nhlakes.org/calendar.htm.

June 28 - July 20, 2008: The Great North American Secchi Dip In. For more information, visit dipin.kent.edu.

July 18 - 20, 2008: Lakeside Living Expo. Gunstock Mountain Resort, Gilford, N.H. For more information visit www.lakesidelivingexpo.com.

Have you scheduled your annual DES biologist visit yet?

If not, please contact Sara Sumner, VLAP Coordinator, at (603) 271-2658 or sara.sumner@des.nh.gov.

Answers to "Test Your Knowledge!"

filamentous; colonial; harmful; bloom; oxygen; nutrients; watershed